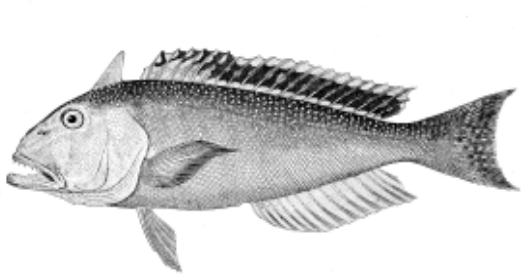

Last Revised: January 2000

Summary Status

Landings and Abundance Trends

Landings Data

Tilefish

by
Paul Nitschke

Tilefish, *Lopholatilus chamaeleonticeps*, inhabit the outer continental shelf from Nova Scotia to South America, and are relatively abundant in the Southern New England to Mid-Atlantic area at depths of 80 to 440 m (44 to 240 fathoms). They are generally found in and around submarine canyons where they occupy burrows in the sedimentary substrate. Tilefish are relatively slow growing and long-lived, with a maximum observed age and length of 35 years and 110 cm (43.3 in.) for females and 26 years and 112 cm (44.1 in.) for males. At lengths exceeding 70 cm (27.6 in.), the predorsal adipose flap, characteristic of this species, is larger in males and can be used to distinguish the sexes. Tilefish of both sexes are mature at ages of 5 to 7 years.

Nominal catches were first recorded in 1915 (148 mt); a record total of 4,500 mt was taken in 1916, but only 5 mt were reported for 1920. Landings later increased to 1,000 to 1,500 mt during the early 1950s, followed by a decline to 30 mt in 1968-1969. Beginning in the early 1970s, a directed commercial longline fishery expanded rapidly in the Mid-Atlantic, and longlines have since been the predominant gear type used. Landings increased to 4,000 mt in 1979 before declining to about 2,000 mt annually from 1982-1986. More recent landings have generally been lower; the 1994-1998 average was 1,100 mt. A small recreational fishery developed during the late 1960s in New York and New Jersey but landings never exceeded 100 mt, and recent recreational catches have been negligible. Currently tilefish is not under management. A tilefish fishery management plan is under development by the Mid-Atlantic Fishery Management Council.

Landings and CPUE data indicate that tilefish were overexploited during the height of the longline fishery (between 1977 and 1982). Landings during this period were well above levels corresponding to long-term potential yield. This period was marked by steadily declining landings and CPUE, average landed size, and size at first maturity in males. Standardized CPUE for vessels in Barnegat, NJ declined from 0.21 kg/tub fished in 1973 to 0.05 kg in 1982, while the NEFSC standardized CPUE series for vessels in the Middle Atlantic-Southern New England region declined from 2.8 mt/days absent in 1979 to 0.45 mt in 1994. Since 1994, this index increased to 0.67 mt in 1998. Estimates of fishing mortality from virtual population analysis, or VPA, increased from 0.20 (1977) to 0.74 (1981). VPA estimates are not available for more recent years.

Long-term potential catch for tilefish is about 1,900 mt at B_{MSY}=8,400 mt as estimated from a nonequilibrium surplus production model. Biomass-weighted F in 1998 was estimated to be 0.45, about twice as high as F_{MSY}=0.22. The stock appears to have been stable at low levels of abundance in recent years. Total biomass in 1998 was estimated to be 2,900 mt, well below B_{MSY}.

For further information

Grimes, C. B., C. F. Idelberger, K. W. Able, and S. C. Turner. 1988. The reproductive biology of tilefish, *Lopholatilus chamaeleonticeps* Goode and Bean, from the United States Mid-Atlantic Bight, and the effects of fishing on the breeding system. Fish. Bull., U.S. 86(4):745-776.

NEFSC [Northeast Fisheries Science Center]. 1993. Report of the 16th Northeast Regional Stock Assessment Workshop (16th SAW), Stock Assessment Review Committee (SARC) consensus summary of assessments. Northeast Fish. Sci. Cent. Ref. Doc. 93-18. 116 p.

Turner, S. C., C. B. Grimes, and K. W. Able. 1983. Growth, mortality, and age/size structure of the fisheries for tilefish, *Lopholatilus chamaeleonticeps*, in the Middle Atlantic-Southern New England region. Fish. Bull., U.S. 81(4):751-763.

Turner, S.C. 1986. Population dynamics of and impact of fishing on tilefish, *Lopholatilus chamaeleonticeps*, in the Middle Atlantic-Southern New England region during the 1970s and early 1980s. New Brunswick, N.J.: Rutgers University. Ph.D. dissertation.

Summary Status

Long-term potential catch (MSY)	=	1,900 mt
Biomass corresponding to MSY	=	B_{MSY} = 8,400 mt
Minimum biomass threshold	=	Not defined
Stock biomass in 1998	=	2,900 mt
F_{MSY}[1]	=	0.22
F_{TARGET}	=	Not defined
Overfishing definition	=	None
F_{1998}[1]	=	0.45
Age at 50% maturity	=	5 to 7 years
Size at 50% maturity	=	60 cm (24 in), males 50 cm (20 in), female
Assessment level	=	Surplus Production Model
Management	=	Tilefish FMP under development

M = 0.10 **$F_{0.1}$ = 0.17** **F_{max} = 0.27**

[1] Biomass-weighted F

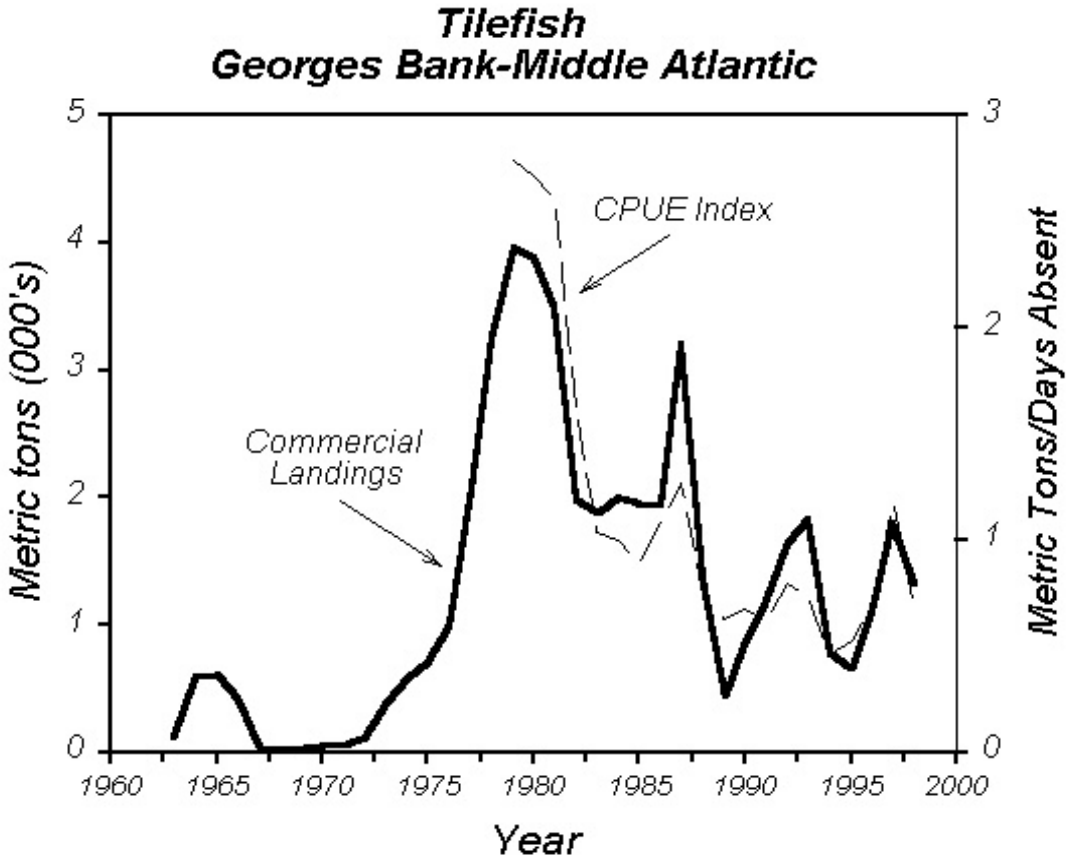

Table 20.1 Recreational catches and commercial landings (thousand metric tons)

		Year									
Category	**1979-88 average**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**
U.S. recreational	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Commercial											
United States	2.6	0.5	0.9	1.2	1.6	1.8	0.8	0.7	1.1	1.8	1.3
Canada	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-
Total nominal catch	2.6	0.5	0.9	1.2	1.6	1.8	0.8	0.7	1.1	1.8	1.3